

May 9, 2017

Elizabeth Hughes, Town Planner
Robert Sepucha, Chair, Zoning Board of Appeals
Town of Concord
141 Keyes Road
Concord, MA 01742

Re: ITW Middlesex School Cell Town Application Filed 12-1-16

Dear Members of the Zoning Board of Appeals:

We, the undersigned, are residents of Concord and live in the area abutting the proposed Industrial Tower & Wireless Inc. (the applicant) facility and transmission tower at 1400 Lowell Road. We have reviewed in detail the applicant's submitted materials for Special Permit and Site Plan Review, dated December 1, 2016.

As a supplement to the materials that we submitted to you earlier this year, this document presents three (3) additional serious issues which we believe represent fundamental contraventions of the Town's Zoning Bylaws, and which are significant reasons supported by substantial evidence to deny the applicant's request for Special Permit.

Each of these three issues is presented in the slides appended as an Exhibit to this letter. In summary, the issues are the following:

- 1) The Town of Carlisle is constructing a 190-foot telecommunication tower at the Banta-Davis Fields in Carlisle (Slide 2). This project has been in the planning stages for more than a year, and related details have long since been made available to the public on the Town of Carlisle's website.¹ In addition, a letter submitted by the Carlisle Town Administrator to the Concord Town Planner dated April 11, 2017 explicitly identifies this new facility. Final approval of site and budget for this 190-foot tower was obtained at the Carlisle Town Meeting of May 2, 2017. The Town of Carlisle has disclosed publicly that the Banta-Davis tower will be installed and operational by the end of 2017, and that zoning and siting accommodation has been made for commercial cellular use.

We believe that this new 190-foot telecommunication tower at the Banta-Davis Fields in Carlisle is a viable alternative to the proposed ITW site on the Middlesex School campus.

We note that our Town's Zoning Bylaws state the following:

¹ http://www.carlislema.gov/Pages/CarlisleMA_News/059672D9-000F8513.

- 7.8.4.1 (e): “The applicant shall provide written documentation that the applicant has examined ...relevant sites in abutting towns that could provide adequate coverage and capacity in the town... that comply with the relevant zoning bylaws of those towns and are consistent with Section 7.8.1 Purpose and Intent (a) through (e). The applicant shall state fully and completely the rationale for rejecting any such sites that are less intrusive upon the interests of the Town than the site(s) for which application is being made.” (emphasis added)

The applicant has failed to provide any documentation, written or otherwise, that it has examined the 190-foot telecommunication tower at the Banta-Davis Fields in Carlisle. We believe it is clear that this site would be less intrusive upon the interests of the Town.

We also believe the applicant has failed to meet the “No Viable Alternatives” standard as articulated in key provisions of the Telecommunications Act (TCA) of 1996, 47 U.S.C. 332(c)(7), and as interpreted by the courts.² The applicant has provided no evidence that it has made any attempt to ascertain whether the Banta-Davis tower would represent a viable alternative. Based on the applicant’s own submitted RF coverage maps, and the Town’s peer-review report of February 21, 2017, it is apparent that adequate coverage, as defined in the Town’s Bylaws, would be readily achievable over length scales of many miles through the utilization of a 190-foot tower of the type at the Banta-Davis Fields.

As such, we believe that the Zoning Board of Appeals must deny the applicant's request for Special Permit.

- 2) The proposed configuration of monopole and base units is not least intrusive. It is routine in the construction of telecommunications towers to physically separate the monopole tower from the base unit instrumentation and power generators. We provide, in the Exhibit (Slides 3-4), an example of a Verizon tower that we have identified in the city of Astoria, Oregon, from 2015. In this embodiment, the tower is physically separated from all other equipment, with communication between the antenna and equipment through buried underground fiber optic cabling. We have further provided evidence that it is

² *Second Generation Props., L.P. v. Town of Pelham*, 313 F.3d 620, 627 (1st Cir. 2002), 313 F.3d at 635 (finding Second Generation “failed to show that a taller tower . . . could not be built in the Overlay Zone to remedy the alleged gap. Nor did it show that no other feasible sites existed outside of the Overlay Zone . . . also failed to explore whether existing towers in nearby jurisdictions . . . could provide other carriers with coverage in the purported gap.”).

widely known that such fiber optic cabling can extend to many kilometers of distance with no adverse functional consequence.

As such, the applicant has failed to sufficiently identify alternate sites that would be the least intrusive upon the interests of the Town, as required in the Town's Bylaws. In Slide 5 of the Exhibit, we provide straightforward examples of locations on the Middlesex School campus where the proposed 120-foot monopole may be located (requiring solely an approx. 7-foot diameter base foundation), and connected to equipment (located elsewhere) by fiber optic and hybrid cabling of the type proposed by Verizon for its Astoria, Oregon site.

By failing to sufficiently consider alternative configurations of antenna and base equipment, we believe it is clear that the applicant has failed to meet the "least intrusive" standard as articulated in key provisions of the Telecommunications Act (TCA) of 1996, 47 U.S.C. 332(c)(7), and as interpreted by the courts. We believe that any reasonable observer would find that the currently proposed configuration and site is not "least intrusive" upon the interests of the Town and its residents, particularly in light of the technical feasibility exemplified and demonstrated by the Verizon Astoria, Oregon site, and many others like it.

As such, we believe that the Zoning Board of Appeals must deny the applicant's request for Special Permit.

- 3) Sprint is a wireless communications provider that is neither a party to the applicant's proposal, nor has antenna facilities at the Middlesex School smokestack site. Nevertheless, Sprint provides adequate coverage to the area where the applicant claims a coverage gap exists. In the Exhibit, slide 6, we present data from Rootmetrix/IHS Inc., a professional global wireless coverage data source provider, that clearly demonstrates that Sprint is able to provide coverage in the area where the applicant claims a coverage gap exists. As such, we believe that any reasonable observer would find that:
 - a. In order to close any putative coverage gap due to the elimination of the smokestack site, a viable alternative for other wireless carriers would be to mirror the antenna arrangements of Sprint; and
 - b. There is no coverage gap upon elimination of the smokestack site.

We respectfully request that the Town Zoning Board of Appeals earnestly and urgently review our concerns.

Sincerely,

Town Residents of Bartkus Farm

Aram Adourian and Anna Ohanyan (#11)
Bin Weng and Kun Liu Weng (#8)
Stuart and Laura Strong (#16)
Suzanne and Rob Mirak (#6)
Ignacio and Rosie Garcia (#17)

Lisa Hansel (#14)
A.J. and Sheila Sohn (#15)
Ignacio and Rosie Garcia (#17)
Dan and Julie del Sobral (#18)

1. Town of Carlisle is constructing a 190' communication tower at Banta-Davis Fields (***"No Viable Alternatives" Standard***)

- 7.8.4.1 (e): "The applicant shall provide written documentation that the applicant has examined ...relevant sites in abutting towns that could provide adequate coverage and capacity in the town... that comply with the relevant zoning bylaws of those towns and are consistent with Section 7.8.1 Purpose and Intent (a) through (e). The applicant shall state fully and completely the rationale for rejecting any such sites that are less intrusive upon the interests of the Town than the site(s) for which application is being made."

2. Proposed configuration of monopole & base units is not least intrusive; many less intrusive solutions exist (***"Least Intrusive" Standard***)

- 7.8.4.1 (a): "...that the proposal reduces or eliminates the significant gap in coverage in a manner that is least intrusive upon the interests of the Town as expressed in the purpose and intent of this Section."

3. Sprint currently provides adequate coverage using existing facilities and without smokestack (***"No Viable Alternatives/Coverage Gap"***)

- 7.8.4.6 (b): Approval criteria: [the] Board... shall make all the applicable findings before granting the special permit... (b) that the applicant is not able to use existing personal wireless communication facility site(s) either with or without the use of filler sites to provide adequate coverage and adequate capacity...

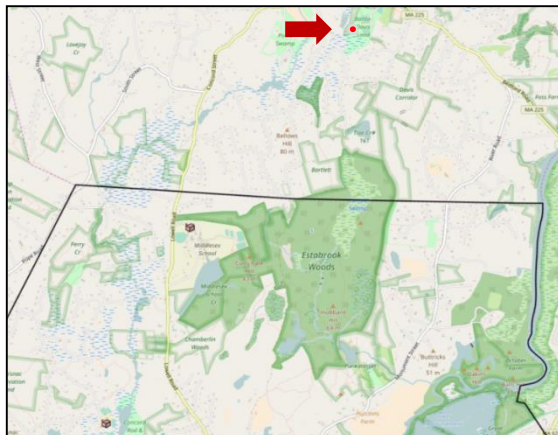
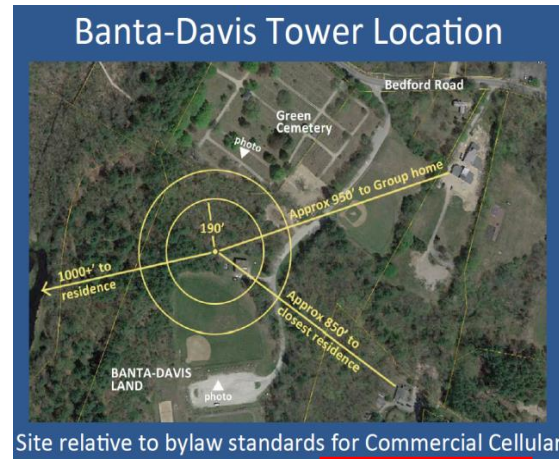
1. Carlisle is constructing a 190' tower at Banta-Davis Fields: construction complete by end of 2017

TOWN OF CARLISLE, MASSACHUSETTS

Public Safety Communications System Design Proposal
Power-Friendly Version

Documentation
[Public Presentation, March 22, 2017](#)
[Revised Proposal, March 13, 2017](#)
[Revised Budget, March 13, 2017](#)
[Questions & Answers, March 13, 2017](#)
[Langone & Associates Documentation](#)
[2015 Isotrope Report](#)

Town of Carlisle 66 Westford Street, Carlisle, MA 01741
 Phone: (978) 369-6155 Fax: (978) 371-0594 townhall@carlisle-ma.gov



Timeline & Permitting Process

- Warrant Article for full cost at TM May 2017
- Bid equipment purchases (State Bid)
- Siting and prelim engineering plans
- Site Plan Review @ PB for 4 new towers
- FCC License frequency, negotiate co-locations
- Order console, towers, antennas, radios
- Towers installed and system operational by end 2017

Additional Notes

- Budget does not include maintenance
 - Possible increase over current but not significant
 - Will develop maintenance budget for TM
- Possible commercial cellular to offset costs
 - Plan to solicit interest from cell/tower companies
 - Partner w/tower company for Banta Tower?
 - Cellular co-location revenue?

Construction funding approved at Carlisle Town Meeting, May 2017

ITW Proposed:



CONCORD MA
1400 LOWELL ROAD
CONCORD, MA 01742

verizonwireless

Base units / gen

PROPOSED VZW HYBRID
CABLE ROUTED
UNDERGROUND TO (N)
MONOPOLE

150' monopole; 7' dia. base

Statement of Compliance for Proposed Wireless Facility

Verizon Wireless Site ID: OR1 City Park
Submitted to the City of Astoria
July 20, 2015

verizon^v

OR1 City Park

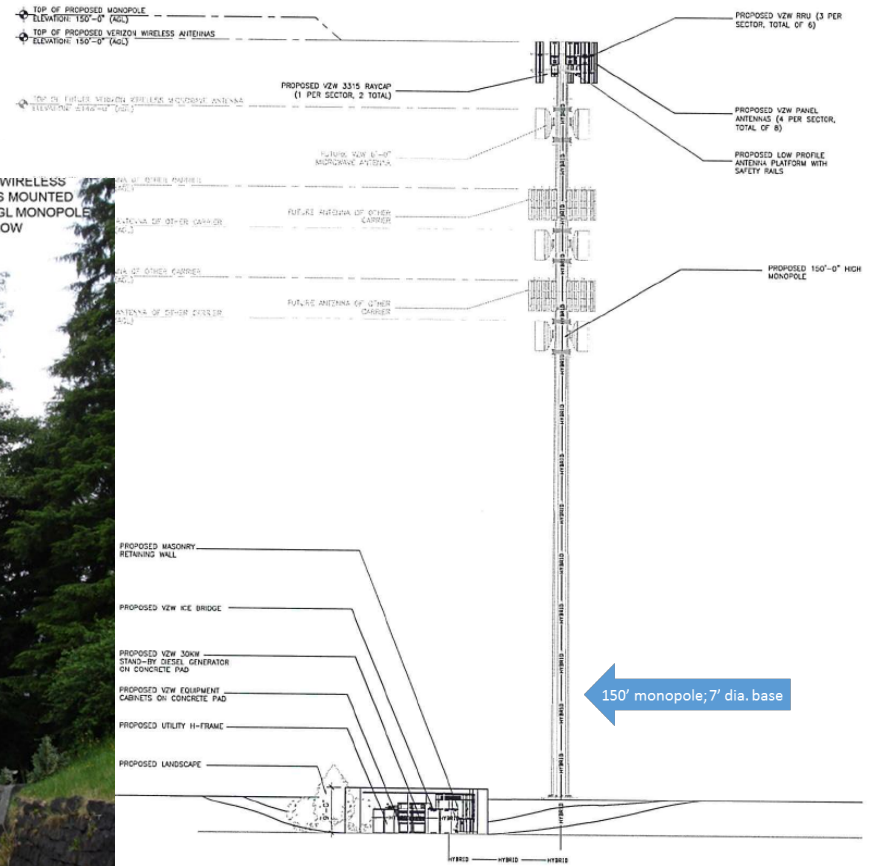
Looking South



OR1 - CITY PARK
(NEW BUILD)
1530 SHIVELY PARK ROAD
ASTORIA, OR 97103

LAT: 46° 10' 38.27" N
LONG: 123° 46' 33.17" W
ELEVATION: 326.5' AMSL

(12) (N) VERIZON WIRELESS
PANEL ANTENNAS MOUNTED
TO A (N) 150'-0" AGL MONOPOLE
- SEE NOTES BELOW



USED WEST ELEVATION

10'-0" (22x34), 1" = 20'-0" (1:1617)

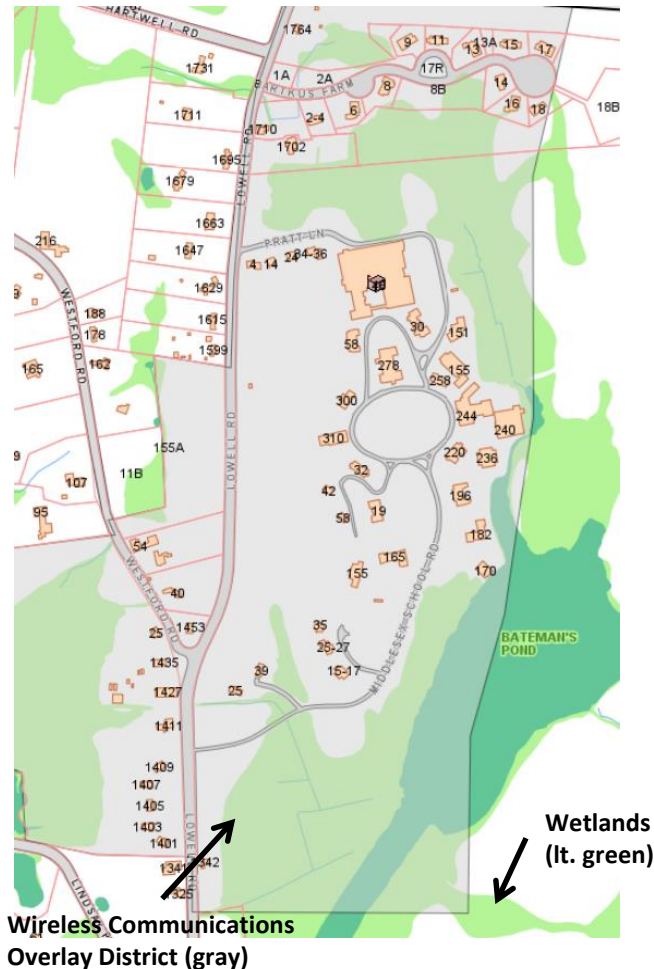


<http://www.wavelengthsmagazine.com/issue26/understanding-cpri.html>

Slide 4

Many viable alternate, less intrusive sites and configurations plainly exist

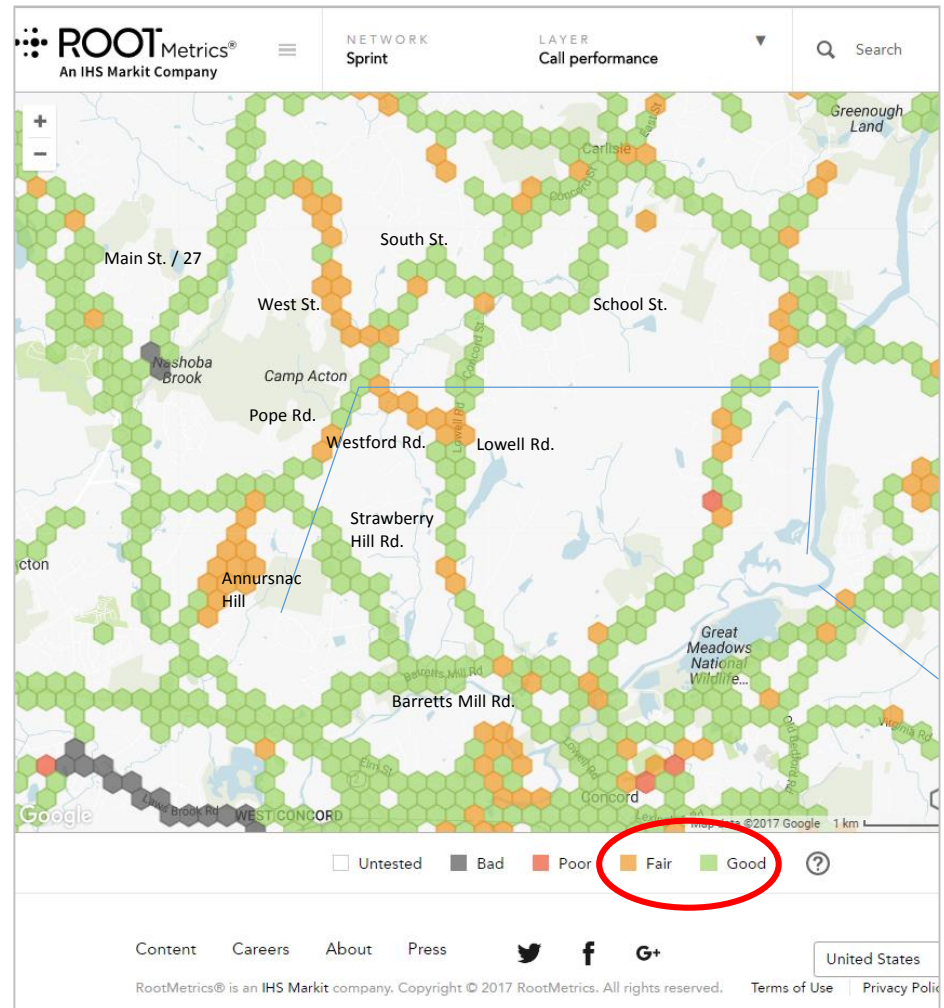
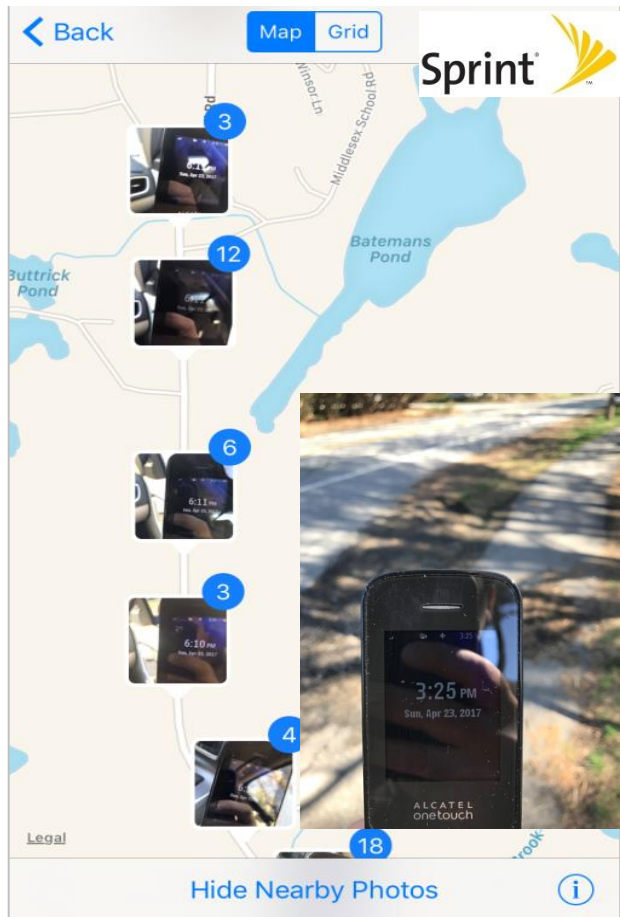
Concord GIS



- The 120' antenna monopole (7' dia. base) can be placed *anywhere suitable*, and connected via underground (or other) cabling to base units / generators which can be sited remotely (or placed in existing structures, across Lowell Rd., etc.).
- There are many configurations that are less intrusive to the Town than the existing proposal.

Slide 5

3. Sprint currently provides adequate coverage using existing facilities without MX smokestack



Sprint is the only carrier with transmitters at both School St. Carlisle *and* Annursnac Hill.

1. Town of Carlisle is constructing a 190' communication tower at Banta-Davis Fields (***"No Viable Alternatives"*** **FALSE**)
2. Proposed configuration of monopole & base units is not least intrusive; myriad less intrusive solutions exist (***"Least Intrusive"*** **FALSE**)
3. Sprint currently provides adequate coverage using existing facilities and without smokestack (***"No Viable Alternatives/Coverage Gap"*** **FALSE**)

Bylaws Violated by Current ITW Proposal:

1. 7.8.4.2(e) Exceeds 20' above tree canopy height
2. 7.8.4.2(j)(ii) 1000' from single-family dwelling (ITW proposal is 520')
3. 7.8.4.2(j)(i) 1000' from child care facility or school
4. 7.8.4.2(j)(iii) 1000' from Historic Places-eligible structure
5. 7.8.4.2(j)(vi) Within Massachusetts-listed endangered wildlife and species
6. 7.8.4.2(p) Five-hour balloon test at location of proposed tower not completed
7. 7.8.4.2(f) Greater than 50% coverage outside town